

## PLASMA DETEMPLATING AND SILANOL CAPPING OF POROUS DIELECTRIC FILMS

### ABSTRACT

5       Methods of preparing a low-k dielectric material on a substrate are provided. The  
methods involve using plasma techniques to remove porogen from a precursor layer  
comprising porogen and a dielectric matrix and to protect the dielectric matrix with a silanol  
capping agent, resulting in a low-k dielectric matrix. Porogen removal and silanol capping  
can occur concurrently or sequentially. If performed sequentially, silanol capping is  
10   performed without first exposing the dielectric matrix to moisture or ambient conditions.